

INFORMATION DISCLOSURE STATEMENT PTO-1449	ATTY. DOCKET NO. NSL-029	SERIAL NO. 10/782,017
	APPLICANT Brian M. Sager, et al.	
	FILING DATE: Feb. 19, 2004	GROUP: 1795
SHEET 1 OF 5		

EXAMINER INITIAL	CITE NO.	DOCUMENT NUMBER	DATE	NAME	CLAS S	SUBCL ASS
/JB/	A	3423301	01-21-1969	Sterns	204	105
	B	3586541	06-22-1971	Chamberlin	136	206
	C	3966568	06-29-1976	Crossley, et al.	205	564
	D	4191794	03-03-1980	Shirland et al.	438	80
	E	4192721	03-11-1980	Fawcett et al.	205	229
	F	4404422	09-13-1983	Green et al.	136	255
	G	4522663	06-11-1985	Ovshinsky et al.	148	403
	H	4536607	08-20-1985	Wiesmann	136	249
	I	4622432	11-11-1986	Yamazaki	136	246
	J	4642140	02-10-1987	Noufi et al.	438	95
	K	4677250	06-30-1987	Barnett et al.	136	258
	L	4806436	02-21-1989	Tada et al.	428	629
	M	4940604	07-10-1990	Suyama, et al.	427	76
	N	5045409	09-03-1991	Eberspacher, et al.	428	620
	O	5078804	01-07-1992	Chen et al.	136	260
	P	5141564	08-25-1992	Chen et al.	136	258
	Q	5244509	09-14-1993	Arao et al.	136	259
	R	5277786	01-11-1994	Kawakami	205	124
	S	5286306	02-15-1994	Menezes	136	249
	T	5356839	10-18-1994	Tuttle et al.	438	479
	U	5401573	03-28-1995	Babel et al.	428	336
	V	5436204	07-25-1995	Albin et al.	438	488
	W	5441897	08-15-1995	Noufi et al.	438	95
	X	5419781	5-1995	Hamakawa et al.	136	244
	Y	5578503	11-1996	Karg et al.	438	95
	Z	5626688	05-06-1997	Probst, et al.	136	265
/JB/	AA	5633033	05-27-1997	Nishitani et al.	427	8

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/JB/	AB	5677250	10-14-1997	Knapp	501	14
=====	AC	6107562	8-22-2000	Hashimoto et al.	136	252
/JB/	AD	5730852	03-24-1998	Bhattacharya et al.	205	192
	AE	5925228	07-20-1999	Panitz et al.	204	484
	AF	5994163	11-30-1999	Bodegard et al.	438	84
	AG	6121541	09-19-2000	Arya	136	255
	AH	6124039	09-26-2000	Goetz et al.	428	457
	AI	6974976	12-13-2005	Hollars	257	184
	AJ	20040219730	11-4-2004	Basol	438	200
	AK	20040144419	7-2004	Fix et al.	136	252
	AL	20050183768	8-25-2005	Roscheisen et al.	136	263
	AM	20050186342	8-2005	Sager et al.	427	248.1
	AN	5013464	05/07/1991	Sugimura et al.	508	150
/JB/	AO	20070092648	4-26-2007	Duren et al.	427	255
=====	AP	20040144419	7-2004	Fix et al.	136	252
/JB/	AQ	6022487	2-2000	Daume et al.	252	70

AC and AP already cited. /JB/
FOREIGN PATENT DOCUMENTS

EXAMINER'S INTIALS	CITE NO.	PATENT NO.	PUBLICATION DATE MM-DD-YYYY	NAME OF PATENTEE	Translation	
					YES	NO
/JB/	AR	DE 2741954	03-29-1979	Hertel		X
	AS	EP 793277	09-03-1997	Matsuyama	X	
	AT	JP 62-89369	04-13-1987	Ito		X
	AU	JP 63-249379	10-17-1988	Tada		X
	AV	WO 02/084708	10-2002	Basol		X
	AW	WO 03/007386	01-2003	Tuttle et al.		X
/JB/	AX	JP 61244004	10-1986	Nishikawa	abstract	

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TECHNICAL PUBLICATIONS

EXAMINER'S INTIALS	CITE NO.	Include name of the author (in CAPITAL LETTERS), title of article, title of item (book, journal , serial, etc...), date, pages, volume issue number, publisher, city/state where published
/JB/	AY	VIJAY K. KAPUR, ASHISH BANSAL, PHUCAN LE, AND OMAR I. ASENSIO, Non-vacuum processing of CuIn _{1-x} Ga _x Se ₂ solar cells on rigid and flexible substrates using nanoparticle precursor inks, Thin Solid Films, 2003, 53-57, Volume 431-432, Elsevier Publishing Company, Amsterdam
	AZ	MARKUS E. BECK, AND MICHAEL COCIVERA, Thin-film copper indium diselenide prepared by selenization of copper indium oxide formed by spray pyrolysis, Thin Solid Films, 1996, 71-82, Volume 272, Elsevier Publishing Company, Amsterdam.
	BA	C. EBERSPACHER, K. PAULS, AND J. SERRA, Non-vacuum processing of CIGS solar cells, UNISUN, 223-224, 2001, Newbury Park, CA
	BB	T. ARITA, N. SUYAMA, Y. KITA, S. KITAMURA, T. HIBINO, H. TAKADA, K. OMURA, N. UENO, AND M. MUROZONO, CuInSe ₂ films prepared by screen-printing and sintering method, 1988, IEEE
	BC	DOUGLAS L. SCHULZ, CALVIN J. CURTIS, REBECCA A. FLITTON, HOLM WIESNER, JAMES KEANE, RICHARD J. MATSON, KIM M. JONES, PHILIP A. PARILLA, ROMMEL NOUFI, AND DAVID S. GINLEY, Cu-In-Ga-Se Nanoparticle Colloids as Spray Deposition Precursors for Cu(In, Ga)Se ₂ Solar Cell Materials, Journal of Electronic Materials, 1998, 433-437, Volume 27, Number 5, Minerals Metals & Materials Society : USA
	BD	CLAIRE J. CARMALT, DANIEL E. MORRISON, AND IVAN P. PARKIN, Solid-state and solution phase metathetical synthesis of copper indium chalcogenides, Journal of Materials Chemistry, 1998, 2209-2211, Volume 8, Number 10, Royal Society of Chemistry (Great Britain)
	BE	SHIXING WENG AND MICHAEL COCIVERA, Preparation of copper indium diselenide by selenization of copper indium oxide, Journal of Applied Physics, 1 August 1993, 2046-2052, Volume 74, Number 3, American Institute of Physics, New York
	BF	G.. NORSWORTHY, C.R. LEIDHOLM, A. HALANI, V.K. KAPUR, R. ROE, B.M. BASOL, AND R. MATSON, CIS film growth by metallic ink coating and selenization, Solar Energy Materials & Solar Cells, 2000, 127-134, Volume 60, Elsevier Science, Amsterdam : Netherlands
	BG	CHRIS EBERSPACHER, CHRIS FREDRIC, KAREN PAULS, AND JACK SERRA, Thin-filme CIS alloy PV materials fabricated using non-vacuum, particles-based techniques, Thin Solid Films, 2001, 18-22, Volume 387, Elsevier Publishing Company, Amsterdam
	BH	C. EBERSPACHER, K. L. PAULS, AND C. V. FREDRIC, Improved processes for forming CuInSe ₂ films, UNISUN, 1-4, Newbury Park, CA
	BI	CHRIS EBERSPACHER, KAREN L. PAULS, AND JOHN P. SERRA, Non-vacuum thin-film CIGS modules, Materials Research Society Symposia Proceedings, 2003, B8.27.1-B8.27.6, Volume 763, Materials Research Society, Warrendale, PA
/JB/	BJ	M. KAELIN, D. RUDMANN, F. KURDESAU, T. MEYER, H. ZOGG, A.N. TIWARI, CIS and CIGS layers from selenized nanoparticle precursors, Thin Solid Films, 2003, 58-62, Volume 431-432, Elsevier Science, Amsterdam : Netherlands

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EXAMINER'S INTIALS	CITE NO.	Include name of the author (in CAPITAL LETTERS), title of article, title of item (book, journal , serial, etc...), date, pages, volume issue number, publisher, city/state where published
/JB/	BK	M. KAELIN, H. ZOGG, A.N. TIWARI, O. WILHELM, S.E. PRATSINIS, T. MEYER, AND A. MEYER, Electrosprayer and selenized Cu/In metal particle films, Thin Solid Films, 2004, 391-396, Volume 457, Elsevier Science, Amsterdam : Netherlands
	BL	R.P. RAFFAELLE, J.G. MANTOVANI, S.G. BAILEY, A.F. HEPP, E.M. GORDON AND R. HARAWAY, Electrodeposited CuInSe ₂ thin film junctions, Prepared for the 1997 Fall meeting sponsored by the Materials Research Society, December 1-5, 1997, Boston, MA
	BM	K.T. RAMAKRISHNA REDDY, R.B.V. CHALAPATHY, M.A. SLIFKIN, A.W. WEISS, AND R.W. MILES, Photoacousstic spectroscopy of sprayed CuGa _x In _{1-x} Se ₂ thin films, Thin Solid Films, 2001, 205-207, Volume 387, Elsevier Science, Amsterdam : Netherlands
	BN	C. GUILLEN, AND J. HERRERO, Recrystallization and components redistribution processes in electrodeposited CuInSe ₂ thin films, Thin Solid Films, 2001, 57-59, Volume 387, Elsevier Science, Amsterdam : Netherlands
	BO	K.T.L. DE SILVA, W.A.A. PRIYANCHA, J.K.D.S. JAYANETTI, B.D. CHITHRANI, W. SIRIPALA, K. BLAKE, AND I.M. DHARMADASA, Electrodeposition and characterization of CuInSe ₂ for applications in thin film solar cells, Thin Solid Films, 2001, 158-163, Volume 382, Elsevier Science, Amsterdam : Netherlands
	BP	A. G. MUÑOZ, S. B. SAIDMAN, AND J. B. BESSONE, Electrodeposition of Indium onto Vitreous Carbon from Acid Chloride Solutions, Journal of The Electrochemical Society, 1999, 2123-2130, Volume 146, Number 6, Electrochemical Society Inc : USA
	BQ	D. PADHI, J. YAHALOM, S. GANDIKOTA, AND G. DIXIT, Planarization of Copper Thin Films by Electropolishing in Phosphoric Acid for ULSI Applications, Journal of the Electrochemical Society, 2003, G10-G14, Volume 150, Number 1, Electrochemical Society Inc : USA
	BR	GEORGE L. SCHNABLE AND JOHN G. JAVES, Electrodeposition of Molten Low-Melting Metals and Alloys from Fused-Salt Systems, Electrochemical Technology, July-August 1964, 201-206, Electrochemical Society, Manchester, N.H.
	BS	GEORGE L. SCHNABLE, Electrodeposition of Molten Metals and Alloys from Glycerine Solutions, Journal of the Electrochemical Society, October 1961, 964-969, Volume 108, Number 10, Electrochemical Society Inc : USA
	BT	WILLIAM M. SALTMAN AND NORMAN H. NACHTRIEB, The Electrochemistry of Gallium, Journal of the Electrochemical Society, March 1953, 126-130, Volume 100, Number 3, Electrochemical Society Inc: USA
	BU	MARIANNA KEMELL, HEINI SALONIEMI, MIKKO RITALA, AND MARKKU LESKELA, Electrochemical Quartz Crystal Microbalance Study of the Electrodeposition Mechanisms of CuInSe ₂ Thin Films, Journal of The Electrochemical Society, 2001, C110-C118, Volume 148, Number 2, Electrochemical Society: USA
	BV	A. KAMPMANN, P. COWACHE, D. LINCOT, AND J. VEDEL, Junction Formation Studies of One-Step Electrodeposited CuInSe ₂ on CdS, Journal of The Electrochemical Society, 1999, 150-155, Volume 146, Number 1, Royal Society of Chemistry (Great Britain)
/JB/	BW	C. EBERSPACHER, K. PAULS, AND J. SERRA, Non-vacuum processing of CIGS solar cells, UNISUN, pages 1-5, 2003 Newbury Park, CA

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/JB/	BX	YASUTO MIYAZAWA and G. M. POUND, HOMOGENEOUS NUCLEATION OF CRYSTALLINE GALLIUM FROM LIQUID GALLIUM, Journal of Crystal Growth 23 (1974) 45-57
	BY	L. BOSIO and C. G. WINDSOR, Observation of a Metastability Limit in Liquid Gallium, Physical Review Letters, Vol. 35, Number 24, 15 December 1975
	BZ	DI CICCO, Andrea, Phase Transitions in Confined Gallium Droplets, Physical Review Letters (1998), 81(14), 2942-2945. Publisher: American Physical Society
	CA	POLONI, R.; DE PANFILIS, S.; DI CICCO, A.; PRATESI, G.; PRINCIPI, E.; TRAPANANTI, A.; FILIPPONI, A., Liquid gallium in confined droplets under high-temperature and high-pressure conditions, PHYSICAL REVIEW B 71. 184111 (2005).
	CB	DI CICCO, A.; FUSARI, S.; STIZZA, S., Phase transitions and undercooling in confined gallium, Philosophical Magazine B: Physics of Condensed Matter: Statistical Mechanics, Electronic, Optical and Magnetic Properties (1999), 79(11/12), 2113-2120. Publisher: Taylor & Francis Ltd.
	CC	HEYDING, R. D.; KEENEY, W.; SEGEL, S. L., Metastable phases in gallium dispersions, Journal of Physics and Chemistry of Solids (1973), 34(1), 133-6.
	CD	LEE, Y.; WANG, T.; LIU, Y.; AO, J.; LI, H.; SATO, H.; NISHINO, K.; NAOI, Y.; SAKAI, S., Fabrication of high-output-power AlGaN/GaN-based UV-light-emitting diode using a Ga droplet layer, Japanese Journal of Applied Physics, Part 2: Letters (2002), 41(10A), L1037-L1039.
	CE	SCHWARCZ, D.; NAKAHARA, S.; OHRING, M., TEM observations of early nucleation and growth stages in aluminum films on liquid gallium droplets, Thin Solid Films (1994), 245(1-2), 260-6
	CF	KARPOV, S. Y.; BORD, O. V.; TALALAEV, R. A.; MAKAROV, Y. N., Gallium droplet formation during MOVPE and thermal annealing of GaN, Materials Science & Engineering, B: Solid-State Materials for Advanced Technology (2001), B82(1-3), 22-24
	CG	Berty, J.; David, M. J.; Lafourcade, L.; Defrain, A., Electron diffraction study of the supercooling of very small gallium droplets, Scripta Metallurgica (1976), 10(7), 645-8
	CH	Huang, J. B.; Fei, G. T.; Shui, J. P.; Cui, P.; Wang, Y. Z., Preparation and internal friction of nanoscale gallium droplets, Physica Status Solidi A: Applied Research (2002), 194(1), 167-172.
/JB/	CI	US Patent Application Serial Number 11/290,633 titled "METALLIC DISPERSION" filed March 15, 2005 (NSL-019B).

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